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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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09/127,085 07/31/98 MCKENNEY

P 3720-50456/M

EXAMINER

TM02/1220

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ART UNIT/PATENT NUMBER

DATE MAILED: 2151

12/20/00

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 7-7-98

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-6 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-6 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

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1. This office action in response to application filed on July 7, 1998. Claims 1-6 are presented for examination.

2. Applicants are requested to note PTO-948 concerning notice of draftsman's patent drawing review. However, correction of the noted defect can be deferred until the application is allowed by the examiner. Applicants are reminded of the provision of MPEP 608.02(q) and (r) regarding a separate letter to the chief Draftsman.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. For example the preamble recite "physical memory", "data structure", "states of threads", "mutual exclusion", and "current and next generation data elements". There is no relationship between any of these elements and the means or steps of the claims. It is not clear whether "physical memory" in line 2 is the same as "memory" in line 7. It is not even clear whether

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there is any processing is taking place or not. What part of the claims is related to any of the elements listed in the preamble.

Examiner believe that the claims are being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: first level bit mask and second level bit mask. The relationship between these bit masks are unclear. The relationship between these level bit mask and operation of the multi processor is unclear.

Claims 4-6 are rejected because of the rejection of their parent claims.

5. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same

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person or subject to an obligation of assignment to the same person.

6. Claims 1-6 are rejected under 35 U.S.C. § 103 as being unpatentable over Slingwine (U.S.Pat No. 5,727,209) in view of Roche et al. (U.S.Pat No. 4,916,697).

As per claim 1-3, Slingwine, teaches:

- of **multi processor** (See Abstract, **multi processor**, col. 2, lines 8-19), having **interconnected processing nodes** (Fig. 3, **elements 108, and 110**), **states of threads** (Fig. 3, elements 112, also **summary of thread activity**, col. 8, lines 31-41), mutual exclusion between current and next generation data elements (**mutual exclusion overhead, and a generation data structure**, col. 7, lines 18-46).

While the reference of Slingwine teaches of existence of a quiescent state when it is known that the thread will not be accessing data structures protected by mutual exclusion mechanism, he fail to explicitly teaches of bit masks for indication of whether a processor has passe through a quiescent state. However, it is well known in the art at the time invention was made to use level bit mask for the indication of passing through a quiescent state, as it is evidenced by Roche et al. (Each bit in the sculpture register 72 has an associated bit in

103(c)

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two or three mask register, ...Col. 8, line 5-30). Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use "level bit mask registry as an indication of a state of a processor" of Roche, in the multi exclusion and concurrency method of Slingwine et al.

Regarding claims 4-6 and the limitation of callback processor checking is the processor has passed through a quiescent state and indicating that in the data structure, the reference of Slingwine et al. teaches of **A CALLBACK PROCESSOR 100, and A CALLBACK PROCESSOR 104** which is an element of a generation data structure, and an entity that monitors a summary of thread activity 106 (col. 6, lines 36-50).

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose voice telephone number is (703) 308-6903. A voice mail service is also available at this number.

All response sent to U.S. Mail should be mailed to:
Commissioner of Patent and Trademarks
Washington, D.C. 20231

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Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington. VA, Six Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses to the Examiner.

All Formal or Official Faxes must be signed and sent to either (703) 308-9051 or (703) 308-9052. Official faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the office, e.g., Finance Division for fee charging, etc.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Majid Banankhah

December 15, 2000


MAJID BANANKHAH
PRIMARY EXAMINER